In the claims:

This listing of claims replaces all prior versions, and listings, of claims in the captioned application.

1. (Withdrawn) A computer system comprising at least one database correlating the presence of at least one mutation in a human immunodeficiency virus (HIV) protease and a change in susceptibility of at least one strain of HIV to a protease inhibitor, comprising at least one record corresponding to a correlation between at least one mutation selected from 41S, 41T, 41I, 41K, 41G and 70E in said protease, and treatment with at least a protease inhibitor.

2. (Withdrawn) A computer system comprising at least one database correlating the presence of at least one mutation in a human immunodeficiency virus (HIV) protease and a change in susceptibility of at least one strain of HIV to a protease inhibitor, comprising at least one record corresponding to a correlation between at least one mutation selected from 41T, 41I, 41K, 41G and 70E in said protease, and treatment with at least a protease inhibitor.

3. (Currently Amended) A method for evaluating the effectiveness of a protease inhibitor as an antiviral therapy for a patient infected with at least one mutant HIV strain_comprising:

(i) collecting a sample from an HIV-infected patient;

(ii) determining whether the sample comprises a nucleic acid encoding HIV protease having at least one mutation selected from 41S, 41T, 41I, [41K}, 41G and 70E;

(iii) correlating the presence of said at least one mutation of step (ii) to a change in effectiveness of said protease inhibitor.

4. (Currently Amended) A method for evaluating the effectiveness of a protease inhibitor as an antiviral therapy for a patient infected with at least one mutant HIV strain_comprising:

(i) collecting a sample from an HIV-infected patient;

(ii) determining whether the sample comprises a nucleic acid encoding HIV protease having at least one mutation selected from 41T, 41I, [41K] 41G and 70E;

(iii) correlating the presence of said at least one mutation of step (ii) to a change in effectiveness of said protease inhibitor.

5. (Withdrawn) A method for identifying a drug effective against mutant HIV protease, comprising:

(i) providing a nucleic acid comprising mutant HIV protease comprising at least one mutation chosen from 41S, 41T, 41I, 41K, 41G and 70E;

(ii) recombining said nucleic acid comprising mutant HIV protease of step (i) into a proviral nucleic acid deleted for said sequence to generate a recombinant HIV virus;

(iii) determining a phenotypic response to said drug for said HIV recombinant virus; and

(iv) identifying a drug effective against mutant HIV based on the phenotypic response of step (iii).

6. (Withdrawn) A method for identifying a drug effective against mutant HIV protease, comprising:

(ii) providing a nucleic acid comprising mutant HIV protease comprising at least one mutation chosen from 41T, 41I, 41K, 41G and 70E;

(ii) recombining said nucleic acid comprising mutant HIV protease of step (i) into a proviral nucleic acid deleted for said sequence to generate a recombinant HIV virus;

(iii) determining a phenotypic response to said drug for said HIV recombinant virus; and

(iv) identifying a drug effective against mutant HIV based on the phenotypic response of step (iii).

7. (Withdrawn) A method for identifying a drug effective against mutant HIV protease, comprising:

(i) providing a HIV protease comprising at least one mutation chosen from 41S, 41T, 41I, 41K, 41G and 70E;

(ii) determining the activity of said drug on said HIV protease;

(iii) determining the activity of said drug on wild type HIV protease;

(iv) determining the ratio of the activity determined in step (iii) over the activity determined in step (ii);

(v) identifying an effective drug against mutant HIV based on the ratio of step (iv).

8. (Withdrawn A method for identifying a drug effective against mutant HIV protease, comprising:

(i) providing a HIV protease comprising at least one mutation chosen from 41T, 41I, 41K, 41G and 70E;

(ii) determining the activity of said drug on said HIV protease;

(iii) determining the activity of said drug on wild type HIV protease;

(iv) determining the ratio of the activity determined in step (iii) over the activity determined in step (ii);

(v) identifying an effective drug against mutant HIV based on the ratio of step (iv).

9. (Currently Amended) A method for evaluating a change in [viral drug] susceptibility <u>of a HIV protease inhibitor</u> comprising the <u>steps of</u>:

(i) collecting a sample from an HIV-infected patient;

(ii) determining whether the sample comprises a HIV protease having at least one mutation selected from 41S, 41T, [41K,] 41 G and 70E;

(iii) correlating the presence of said at least one mutation of step (ii) to a change in [viral drug] susceptibility <u>of said HIV protease inhibitor</u> .

10. Currently amended) A method for evaluating a change in [viral drug] susceptibility <u>of a HIV protease inhibitor</u> comprising the <u>steps of</u>:

(i) collecting a sample from an HIV-infected patient;

(ii) determining whether the sample comprises a HIV protease having at least one mutation selected from 41T, [41K,] 41 G and 70E;

(iii) correlating the presence of said at least one mutation of step (ii) to a change in [viral drug] susceptibility <u>of said HIV protease inhibitor</u>.

11. (Withdrawn) A method for evaluating a change in viral drug susceptibility, comprising:

(i) providing an HIV comprising a protease comprising at least one mutation chosen from 41S, 41T, 41I, 41K, 41G and 70E;

(ii) determining a phenotypic response of said virus to said drug; and

(iii) correlating the phenotypic response of step (ii) to a change in viral drug susceptibility.

12. (Withdrawn) A method for evaluating a change in viral drug susceptibility, comprising:

(i) providing an HIV comprising a protease comprising at least one mutation chosen from 41T, 41I, 41K, 41G and 70E;

(ii) determining a phenotypic response of said virus to said drug; and

(iv) correlating the phenotypic response of step (ii) to a change in viral drug susceptibility.

13. (Withdrawn) A method for identifying a drug effective against mutant HIV protease, comprising:

(i) providing a HIV protease comprising at least one mutation chosen from 41S, 41T, 41I, 41K, 41G and 70E;

(ii) determining the activity of said drug towards said protease;

(iii) determining the activity of said drug to wild type HIV protease and;

(iv) determining the ratio of the activity determined in step (iii) over the activity determined in step (ii);

(v) identifying an effective drug against mutant HIV based on the ratio of step (iv).

14. (Withdrawn) A method for identifying a drug effective against mutant HIV protease, comprising:

(i) providing a HIV protease comprising at least one mutation chosen from 41T, 41I, 41K, 41G and 70E;

(ii) determining the activity of said drug towards said protease;

(iii) determining the activity of said drug to wild type HIV protease and;

(iv) determining the ratio of the activity determined in step (iii) over the activity determined in step (ii);

(v) identifying an effective drug against mutant HIV based on the ratio of step (iv).

15. (Withdrawn) A vector for performing phenotypic analysis comprising an HIV sequence having at least one mutation in the HIV protease gene chosen from 41S, 41T, 41I, 41K, 41G and 70E.

16. (Withdrawn) A vector for performing phenotypic analysis comprising an HIV sequence having at least one mutation in the HIV protease gene chosen from 41T, 41I, 41K, 41G and 70E.

17. (Withdrawn) An isolated and purified HIV protease sequence having at least one mutation selected from 41S, 41T, 41I, 41K, 41G and 70E, wherein said at least one mutation in said sequence correlates to a fold change in susceptibility towards a HIV protease inhibitor.

18. (Withdrawn) An isolated and purified HIV protease sequence having at least one mutation selected from 41T, 41I, 41K, 41G and 70E, wherein said at least one mutation in said sequence correlates to a fold change in susceptibility towards a HIV protease inhibitor.

19. (Withdrawn) An isolated and purified oligonucleotide comprising a HIV protease sequence of 5 to 100 bases for in vitro diagnosis of viral drug resistance, characterized in that said oligonucleotide comprises at least one mutation chosen from 41S, 41T, 41I, 41K, 41G and 70E.

20. (Withdrawn) An isolated and purified oligonucleotide comprising a HIV protease sequence of 5 to 100 bases for in vitro diagnosis of viral drug resistance, characterized in that said oligonucleotide comprises at least one mutation chosen from 41T, 41I, 41K, 41G and 70E.